

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Previously Presented) The apparatus of claim 63, wherein the drive circuit includes a controller which generates a digital signal using the waveform shape data stored in the memory.

3. (Currently Amended) The apparatus of claim 63, wherein the drive circuit ~~utilizes-is configured to utilize~~ the waveform shape data so that for each of plural points comprising a period of the waveform the drive signal has an appropriate amplitude for the predetermined waveform shape.

4. (Original) The apparatus of claim 3, wherein the waveform shape data is in paired relation to the plural points comprising the period of the waveform.

5. (Original) The apparatus of claim 3, wherein the waveform shape data comprises amplitude values which are in paired relation to the plural points comprising the period of the waveform.

6. (Original) The apparatus of claim 3, wherein the waveform shape data comprises pulse width modulation values which are in paired relation to the plural points comprising the period of the waveform.

7. (Cancelled)

8. (Previously Presented) The apparatus of claim 63, wherein the operational parameter which is optimized by the waveform shape data is one of: fluid flow in the pump; pressure in the pump; acceleration; and noiselessness.

9. (Previously Presented) The apparatus of claim 63, the waveform shape data has been prepared to optimize plural operational parameters of the pump.

10. (Cancelled)

11. (Previously Presented) The apparatus of claim 63, wherein the waveform shape data has been prepared by solving a waveform equation, the waveform equation having coefficients determined to optimize plural operational parameters of the pump.

12. (Currently Amended) The apparatus of claim ~~10~~63, wherein a number of coefficients determined for the waveform equation depends on a number of harmonics of the waveform that are within a bandwidth of the pump.

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63. (Currently Amended) A pump comprising:

a pump body ~~for configured to~~ at least partially ~~defining~~ define a pumping chamber;

a piezoelectric actuator situated in the pump body and responsive to a drive signal for drawing fluid into the pumping chamber and expelling fluid from the pumping chamber; and

a drive circuit ~~which produces~~ configured to produce the drive signal so that the drive signal has a waveform of a predetermined waveform shape for optimizing at least one operational parameter of the pump, the drive circuit including a memory, the memory having stored therein waveform shape data which is utilized by the drive circuit in producing the drive signal according to the predetermined waveform shape, the waveform shape data having been prepared by solving a waveform equation, the waveform equation having coefficients determined to optimize at least one operational parameter of the pump.